THE MINISTER OF EXTERNAL AFFAIRS (SHRI P.V. NARASIMHA RAO) : (a) It is a fact that earlier the National Institute of Rural Development used to conduct a training or orientation programme for the Probationers of Indian Foreign Service.

(b) The training programme at the National Institute of Rural Development was started for the IFS Probationers of 1976 batch and was conducted also for the 1977 and 1978 batches of the IFS, that is for a total of three years. This training was discontinued thereafter.

(c) It was felt in the main, that Probationers were already being exposed to the problems and tasks of rural development during the course of their district training.

(d) No, Sir.

Establishment of Propellent Factory at Warangal In Andhra Pradesh

*458. PROF. C. LAKSHMANNA : Will the Minister of DEFENCE be pleased to state :

(a) whether it is fact that a proposal for the establishment of Propellant Factory at Warangal in Andhra Pradesh is pending with Government for some time ; and

(b) if so, what progress has been made in this regard ?

THE MINISTER OF DEFENCE (SHRI K.C. PANT) : (a) and (b) In connection with a proposal for the setting up of a propellant factory in the country, various sites, including Warangal, have been evaluated by a Site Selection Committee. govvernment are yet to take a decision in the matter.

Fifth Generation Computer Systems

*459. SHRI PRAMOD MAHAJAN : will the PRIME MINISTER be pleased to state :

(a) what progress has so far been made at the six nodal centres by the Deptt. of Electronics in the Research and Development of knowledge based computer system/ Fifth Generation Computor Systems;

(b) what is the stage as at present of the research in the field of natural language for computers conducted at National Centre for Software Technology (NCST) Bombay and whether it has been found that Sanskrit language can serve as the best computer language far "Artificial Intelligence"; and

(c) whether a project for this purpose has been forwarded under the FGCS/KBCS programme: and is so, what is its outline and programme in phases ?

THE MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND THE MINISTER OF STATE IN THE DEPARTMENTS OF OCEAN DEVELOPMENT, ATOMIC ENERGY, ELECTRONICS AND SPACE (SHRI K. R. NARAYANAN) : (a) The progress made by the six nodal centres of the Department of Electronics (DOE) in the Research and Development of knowledge Based Computer system/Fifth Generation Computer System is as follows :

(i) Indian Institute of Science (IISc), Bangalore has designed a Parallel Processing Machine based on 8088 processor for Logic Programming. The machine can be upgraded to 80386 processors. Further work on the system is underway.

(ii) At the TIFR Nodal Centre, some progress has been made in the hidden Markov model, and expert system approach for Speech Recognition.

(iii) At National Centre for Software Technology (NCST), an expert system shell and simple implementation of WSP have been developed. Expert Systems for cardiac arrested solution of simultaneous equations development have also been developed.

(iv) At Indian Institute of Technology (IIT), Madras Nodal Centre, expert systems for rural information, health and planning and for engineering design and trouble shooting, for automatic process planning are being developed.

(v) At the Indian Statistical Institute (ISI) Nodal Centre, project on geographical mapping along with GSI has been completed and another one on the industrial inspection system is underway.

(vi) At the Department of Electronics (DOE) Nodal Centre, an expert system for Income-tax assessment has been designed and developed. It is now under extensive testing. Work in the Logic Programming has also begun at this centre for legal reasoning application in the Government.

(b) Research in Natural Language at NCST is in 2 broad areas.

(i) Man-machine communication using natural language ;

(ii) Human aided machine translation (from English to Hindi for a limited subset of language using a limited vocabulary).

NCST has emphasised the use of interaction alongwith the Artificial Intelligence to obviate problems in Natural Language understanding. Knowledge representation scheme used includes frame like predicative structures. The group at NCST is not fully convinced about Sanskrit as a practical formalism for knowledge representation.

(c) A specific project on Sanskrit as a computor language for artificial Intelligence has not yet been formulated under the FGCS/KBCS Programme.

Dam over Rives Mahanadi

*460. SHRI KAHNU CHARAN LENKA : Will the Minister of WATER RESOURCES be pleased to state :

(a) whether any scheme has been received from the Orissa Government to construct a dam on river Mahanandi downstream of Hirakund Dam;

(b) if so, what are the details thereof; and

(c) by when the work on it is likely to be started?

THE MINISTER OF LAW AND JUSTICE AND THE MINISTER OF WATER RESOURCES (SHRI B. SHANKARANAND): (a) and (b) Yes, Sir. The project estimated to cost Rs. 1103 crores envisages flood protection to an area of about 6.57 lakh hectares besides installed power capacity of 960 MW

(c) The project has not been included in the Seventh Five Year Plan.